STRATEGY RESEARCH PROJECT

THE EVOLUTION OF LOGISTICS IN THE UNITED STATES ARMY RESERVE TO THE REVOLUTION IN MILITARY LOGISTICS

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ABSTRACT

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The USAR continues to be the most utilized Reserve Component organization in the Department of Defense, but like its Active Component counterpart it must evolve in its core competencies by identification and development of logistics process improvements and then apply technology to resolve identified deficiencies.

This study summarizes Focused Logistics, which is the essential element behind the Army RML, and explains the process of evolutionary change for a military force to reach the Army After Next (AAN). It then addresses the contributions the Army Reserve is making in the current force and addresses USAR initiatives for the programmed force of Army XXI. Finally, this study explains what the Army and Army Reserve are doing to modernize as logistics is transformed to accomplish support of the Army's mission of full spectrum dominance.

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PREFACE

This study attempts to summarize the United States Army Reserve's contribution to and participation in the Army's Revolution in Military Logistics (RML). The impetus for deciding to write this document was my involvement in a study group that occurred in March and April of 1997. The focus of this study was the USAR Evolution in Military Logistics. The study group was a military/industry partnership made up of Army Reserve AGRs, unit MILTECHs, and industry contractors.

Although a tremendous amount of effort, anguish, and contemplation occurred during the study group, I felt unfulfilled with the results. I felt we did not get down to the nuts and bolts of what was needed for this "Evolution in USAR Logistics."

There is an enormous need in the Army Reserve to participate and be heard in every AAN/RML action office, meeting, in-process-review, and war game. I am not comfortable with the representation the USAR is afforded. I am satisfied with what the Army Reserve is doing to plan and modernize for Army XXI, but I am concerned that the budget process will not allow us to keep up with the efforts of the Active Component.

I would like to get my arms around this RML concept and carry it through to the endstate; however, this endstate is more than 20 years away. Nevertheless, I plan to pursue USAR parity and relevance until such time that I am told to go elsewhere.

Dozens of people deserve thanks for helping pull sources together and develop my perspective. The United States Army War College and the University of Texas Center for Professional Development and Training were especially supportive and without their help this product would not be complete. COL Geiger of USARC DCSLOG and COL Chagnon of OCAR LOGDIV were instrumental in providing insight, as was VSE, INNOLOG, and Camber industries. I look forward to working with all parties in any future endeavors that address the evolution of USAR logistics.

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I. INTRODUCTION

The Army Revolution in Military Logistics (RML) intends to transform Army logistics into a distribution based system that substitutes logistics velocity for logistics mass as the Army moves toward Force XXI and the Army After Next (AAN).[1] "The Army Strategic Logistics Plan (ASLP) is the Army Chief of Staff's vehicle - under the direction of the Deputy Chief of Staff for Logistics - to guide Army logistics into the 21st century."[2] It translates the RML Campaign Plan into executable logistics objectives, strategies, and initiatives in order to meet the challenges of the future Army.[3]

Army Vision 2010 and *Joint Vision 2010* place increased emphasis on the use of Reserve Component capabilities as part of the National Military Strategy. Because the Army looks increasingly toward the United States Army Reserve (USAR) for Combat Service Support (CSS) in the battlespaces of the future, it is imperative that the USAR implement an RML program that parallels that of the Army and achieves the Chief, Army Reserve's (CAR) vision of complete integration into the Total Army.

The Army Reserve has been called upon in more varied missions in the last five years than in any other period since its activation in 1908. The USAR is performing mission critical tasks in domestic assistance, contingency operations, overseas deployment training, and peace operations. The CSS core competencies of the Army Reserve are essential to America's Army

as well as the Joint Force. However, in these times of continued resource reductions the Army Reserve must address numerous problems while proving it is relevant to our national defense.

Decreasing resources in recent POMs, poor equipment accountability, training distracters, and a large TDA infrastructure are some of the most critical problems faced by the Army Reserve. These problems have resulted in difficulty to train as they fight, stockpiling of supplies, an automation architecture that continues to lag behind Active Component counterparts, and an antiquated logistics system which contributes to a shortfall in readiness.

Numerous real world missions, focus on mobilization requirements, and an increase in volume of equipment has shaped the USAR focus to the near term. Before the USAR can participate in the Army RML it must evolve the current logistics infrastructure to maximize efficiency and effectiveness while enhancing unit readiness posture. What is needed is an evolution in Army Reserve logistics.

Figure 1. Why Have The USAR RML?

Problems	Resulting In
• Decreasing Resources	• "Hollow Logistics"
• Inadequate Stewardship	• Wasted Resources
• Lack of Equipment Accountability	• Increased Reports of Survey
• Logistics Training Distracters	• Decreased Training Time
• TDA Infrastructure	• Failing to Organize As We Fight
• Increased Equipment Density	• Huge Year 2000 Maintenance Bill
• Inaccurate Readiness Reporting	• False Readiness Indicators
• Inefficient Supply System	• Continued Stockpiling
• Failure to Leverage Industry	• Antiquated Logistics Operations
• Fragmented Automation Fielding	• Lack of Standardization

II. The Revolution in Military Logistics (RML)

As modern warfare increases in technological sophistication, speed, and complexity, the commitment and ability of Army logistics to provide total logistics support will become even more important in peace and war. The Army Revolution in Military Logistics (RML) Campaign Plan provides the vision, strategy, conceptual templates, and processes required to change the way we think about logistics and how logistics will support the Army of the 21st century.[4]

The military definition of logistics will change from the stovepipe descriptions of 'wholesale or retail', 'strategic or operational', and 'in-theater or CONUS-based'. Traditional CSS branches will evolve into a single logistics system that will be broader and incorporate other functions of personnel and health systems, transportation, maintenance, supply, engineering, and acquisition.[5]

21st century logistics will be transformed from the current supply-based system into a distribution-based system. It will be the fusion of information, logistics, and transportation technologies. Logistics will be anticipatory and hold to the imperative of seeing and knowing all support requirements and predicting what and where support is needed.[6] The consequence of these actions will be focused logistics-the right stuff at the right time and the right place.[7]

A. The Tenets of RML

The Revolution in Military Logistics holds to the tenets of enabling the logistician:

- 'To see' - the ability to dominate battlefield awareness through total visibility (assets, personnel, units, and casualties).[8] Each commander and supporting logistician will have the ability to see and know, on the same electronic screen and map, the call for support needs of all elements.
- 'To know' - to identify and state vectors with predictive, anticipatory readiness of friendly and enemy force posture in order to gain dominant battle cycle time for the logistician and his commander.[9] The logistician will know in advance what is needed by the war fighter and predict delivery where it is needed at the time it is required.
- 'To integrate' - including all aspects of private, third party and commercial capabilities.[10] The operational concept will change to integrate non-uniformed logistical support with modularized and streamlined uniformed organizations.
- 'To move' - through rapid, reliable transportation.[11] Moving what is required will be greatly enhanced through commercial transportation and quick "logistics swarm" methods of delivery.

- 'To communicate' - through assured communication and data linkages. Communications, including commercial communications, will allow the systematization of the RML.[12]

- 'To systematize' - through seamless logistics information and decision support systems. Private commercial providers will be strategically aligned to ensure complete, efficient and effective organizational utilization of a single, central, joint defense logistical manager.[13]

B. Focused Logistics

"Focused Logistics will be the fusion of information, logistics, and transportation technologies to provide rapid crisis response, to track and shift assets even while en route, and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical level of operations."[14]

Focused Logistics will provide balanced multi-functional logistics support to Army and Army-supported forces throughout the area of operations. This will be made possible through the integration of DoD-defined logistics functions, integration with Joint and Army operational command and control systems, and liaison with allied operational and logistics forces.[15]

Focused Logistics will require industry and DoD to be vested partners who share visibility of assets and locations in order that all organizations and services receive support, distribution,

and redistribution from factory to foxhole regardless of geographical boundaries.[16]

Traditional logistics concepts will change and life cycle costs will be reduced as continued improvements in reliability, maintainability, and supportability of weapons systems decrease support requirements.[17]

Focused Logistics will mean real-time situational awareness of requirements for the commander and each supported unit, as well as the capabilities and constraints of each element of the supporting logistics force and the resupply process.[18]

Financial management systems and logistical systems will be linked together and will be capable of providing realtime finance and accounting support anywhere in the world for joint forces. A joint system is required so that an easy cross-leveling of assets can be accomplished during deployment or combat operations.[19]

"No other RML concept is executable without Focused Logistics. It is an operation which could stand alone, and will further enable the Total Army to react quickly to provide logistical sustainment across all patterns of operations."[20]

C. Functional Domains of RML

Achieving a Revolution in Military Logistics will require dramatic change in three functional domains: technology

application and acquisition agility, force sustainment, and force projection.[21]

Technology is the key enabler to a Revolution in Military Affairs and a Revolution in Military Logistics. *Technology application* requires using all sources of our national technology base in order to identify, target, and exploit emerging technology that has potential military application. If it is properly used it will provide tremendous technological advances in how wars are fought and supported.[22] Shown in the tables below are key technology areas and potential logistics applications where the Army expects to see major advances. The Army must focus its attention and funding on these and other technologies for Army XXI and AAN.

Table 1. Information Technologies/Potential Logistics Applications.

INFORMATION TECHNOLOGIES	POTENTIAL LOGISTICS APPLICATIONS
Sensors	Report real-time status of critical items, by system/unit.
Diagnostics/prognostics	Sense pending system failures, requisition parts, schedule repairs.
Source data automation	Automatically transmit data to decision support systems.
Sentinel systems	Automated decision support process.
Intelligent (neural) networks	"Smart" communication.
Natural language processors	Free-form data bases.
Voice-activated automation	Simplify man-machine interface.

Source: U.S. Deputy Chief of Staff, Logistics. Revolution in Military Logistics Campaign Plan-The Way Ahead (Washington, D.C.: Government Printing Office, 1997), p. 11.

Table 2. Other Technologies/Potential Applications.

OTHER TECHNOLOGIES	POTENTIAL LOGISTICS APPLICATION
Robotics	Reduce human interface.
Advanced Materials	Strength, versatility, utility at less weight, volume, and cost.
Smart/brilliant munitions	Decrease force structure and materiel mass.
Artificial intelligence	Assist in analytical and judgmental tasks.
Satellite communications	Assured and rapid communications.
Advanced manufacturing	On-site manufacturing.
Space operations	Command, control, communications, and supply.
Biometrics	Create materials, medicines and prosthetics biologically.
Nanoscience	Microminiaturization through molecular-level applications.
Micro-miniaturization	Reduce mass and volume; enhance density of capabilities.
New/Synthetic Fuels	Improved energy sources-weight, volume, and density.

Source: U.S. Deputy Chief of Staff, Logistics. Revolution in Military Logistics Campaign Plan-The Way Ahead (Washington, D.C.: Government Printing Office, 1997), p. 11.

Acquisition agility is the partner of technological application. It provides the means to quickly transfer and insert technology into current or new systems. The goal is a streamlined process and organization that can acquire quickly and cost effectively the materiel necessary to maintain readiness, transition to war, and sustain combat operations.[23] The Army Acquisition Executive, in coordination with the U.S. Army Materiel Command (AMC) and other DoD agencies, has initiated many programs to create such a system.

Force Projection. The Army's CONUS-based contingency forces must be able to deploy faster across the globe, both strategically and operationally, to be relevant in the 21st

century. Traditional OCONUS movements are gone, and in its place is strategic maneuver, the rapid projection of overwhelming combat and CSS forces directly into a meeting engagement in the area of operations.[24] The ability to provide these force projection capabilities will confirm both the Army's relevancy and its success in achieving a Revolution in Military Logistics in the Army After Next.[25]

It is through *Force Sustainment* that the Army synchronizes the transition from today's Army through Army XXI to the Army After Next. Army logistics must provide the fuel, ammunition, food, supplies, repair parts, medical care, equipment, transportation, and other forms of support to maintain Total Force readiness in peacetime and sustain the force in all combat operations. "A distribution-based, Focused Logistics system is the key enabler to force sustainment."[26]

D. The Evolution to the Revolution in Military Logistics

> Every revolution, whether political, economic, or military, unfolds in evolutionary steps. Generally, about 15 years, or half a generation, is required for vision and ideas to mature into secure and irreversible change. It takes about that long to grow a battalion commander or platoon sergeant or to develop, test, and field major systems. It may take even longer to truly alter the institutional culture sufficiently to internalize revolutionary change.[27] (The Annual Report on the Army After Next Project, 3)

A more complete understanding of the Army's long-range process of change is beginning to emerge as a result of the Army

After Next Project. This long-range process can be divided into the current force, the programmed force, and the potential force.[28]

The *current force* is today's Army in the field, ready to fight. It is a Total Force composed of the Active Army, Army National Guard, Army Reserve, and civilian employees. This force remains trained and ready to fight in an era of increased operational commitments and a wide variety of missions.[29] This has meant tiered resourcing, leaner command and control structures, realigned personnel management, re-engineered base operations, and frequent deployments for the Army Reserve.[30]

The *programmed force* is the Army in near-term development and aimed at the midterm future, which is Army XXI. This force falls within the influence of the Program Objective Memorandum (POM), which tends to lock large programs within a 5-to-7 year period to compete within the budget process.[31] The thrust of USAR planning supports the Army goals to leverage the commercial sector and move toward technology insertions. In addition, the USAR is looking at re-engineering its structure to enable it to train logistics soldiers in TOE, 'go-to-war' units (versus TDA units) and achieve the readiness state necessary to make it relevant to the Total Army from the present through Army XXI to the Army After Next.

The AAN is primarily concerned with the *potential force*. The focus shifts from improvement of fielded capabilities to long-term research and development programs and from current and programmed force structures to capabilities of the emerging vision of future warfare. "While some of the associated technologies may be revolutionary, the potential force itself should be viewed essentially as the next logical step in a continuing adaptation of military capabilities to the changing dynamics of war and requirements of national security."[32]

III. The Evolution of Army Reserve Logistics

Reductions in the active force have made the Reserve Component even more essential to meeting the nation's needs across the full spectrum of operations, from disaster relief to war. With more and more of the logistical structure transitioning to the Reserve Component, new and innovative ways must be found to integrate them into Army peacetime training and wartime deployment. Timely utilization of the reserve logistical forces will allow precise support force structuring for meeting the challenges of the 21st century. Standing force capabilities will be complemented or supplemented by the Reserve Components in all areas of the battlespace.[33]

The Army Reserve vision to evolve in military logistics captures the intent of the Army RML Campaign Plan. The USAR Logistics Strategic Management Plan (LSMP) is building a bridge

that will transition Army Reserve logistics to the 21st century. Plans and initiatives in the USAR SLMP are designed to enable an evolution of current logistics infrastructure, enhance unit readiness, and enable the USAR to develop into a full spectrum, distribution-based system that incorporates velocity management and information technology to its fullest. The following sections describe the development of the current USAR force, the progression toward the USAR programmed force of Army XXI, and the USAR potential force of the Army After Next.

A. The Army Reserve Today

The Army Reserve is in the final stages of its strength drawdown. Since 1989, when America began reducing its armed forces, the Army Reserve has cut its strength from 319,000 to 215,000 soldiers at the end of FY 97, en route to a FY 98 programmed endstrength of 208,000 (a total reduction of 35%, the steepest reduction of any reserve component in DoD).[34] This drawdown in the Army Reserve accompanied a significant restructuring and reorganization of the force, including the inactivation or transfer of virtually all of its combat units, most of its rotary-wing aviation units, and some corps and division level combat support units to the Army National Guard.[35] Additionally, the Quadrennial Defense Review (QDR) mandated another end strength cut of 7,000 soldiers to be carried out

beginning in FY 2000 through FY 2002 with an end state of 201,000 soldiers by FY 2002.[36]

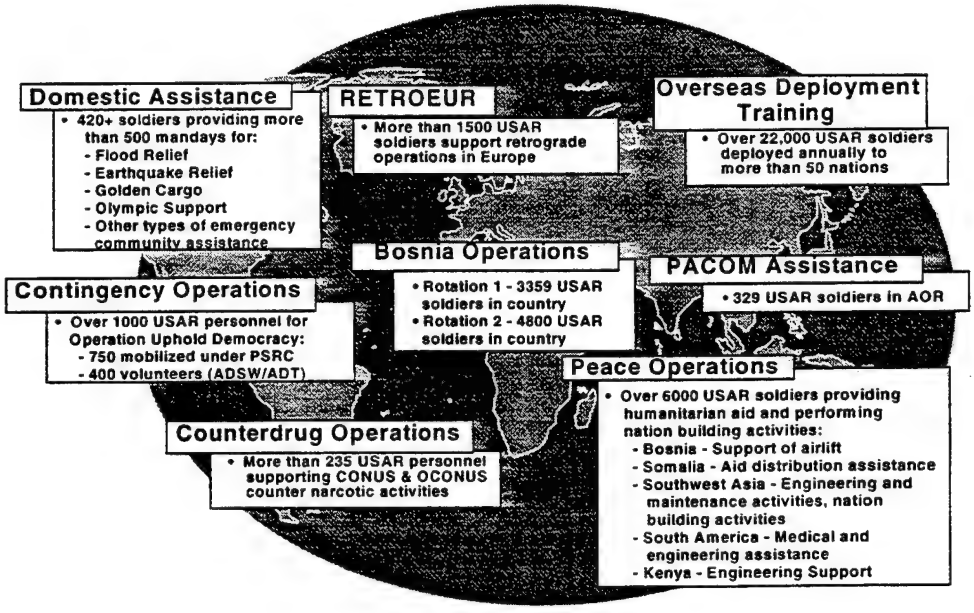
At the same time, the USAR reduced command and control headquarters by 37%, enhanced USAR interoperability with federal agencies by aligning command boundaries to standard federal regions, reduced and redesigned 12 Training Divisions into 7 Divisions (Institutional Training), and provided regionally-based individual training for all Army components including initial entry, one station unit, and ROTC training.[37] Additionally, the USAR redesigned 2 Maneuver Area Commands and 9 Maneuver Training Commands into 5 Divisions (Exercise) that are focused on providing collective and simulation training for USAR and ARNG units. Furthermore, the USAR reengineered its personnel, management, and administration by reorganizing the Army Reserve Personnel Center (ARPERCEN) to the Army Reserve - Personnel Command (ARPERSCOM).[38]

Today's restructured Army Reserve focuses on proven core competencies and provides 45 percent of the Army's combat service support units, 30 percent of the Army's combat support units, 100 percent of the Army's training and exercise divisions, 100 percent of the railway units, 100 percent of the enemy prisoner of war brigades, 97 percent of the civil affairs units, 86 percent of the psychological operations units, 70 percent of the

medical care units, and 62 percent of the chemical and biological defense capability.[39]

The USAR is the most utilized of Reserve Components (RC) in Department of Defense (DoD) today, providing 71% of RC forces mobilized for Operations Joint Endeavor and Joint Guard, 68% of all forces mobilized for Operation Uphold Democracy in Haiti, and 35% of RC forces in Operations Desert Shield and Desert Storm.[40]

Figure 2. The USAR Today - Engaged Worldwide.



Source: Office, Chief Army Reserve. U.S. Army Reserve Readiness and Tiered Resourcing. 1997.

In spite of this high utilization rate, the USAR has the lowest percentage of Full-Time Support (FTS) with only 9% of the Selective Reserve in FTS positions. FTS levels are at 13.3% for the Army National Guard, 26.1% for the Naval Reserve, 17.2% for the Marine Corps Reserve, 31.5% for the Air National Guard, and 23.1% for the Air Force Reserve.[41]

To attain its high state of readiness, the USAR has slashed overhead, prioritized resources, and infused technology and proven business principles into training, administration, and logistics. It has not been easy, but the Army Reserve has led the way in how to do business, in many cases for the entire Army. The Army Reserve, a fully seamless integrated partner of the Total Army, continues to organize, train and equip its units to mobilize and deploy in support of the National Military Strategy (NMS).[42]

> Army Reserve capabilities not only meet the wartime and peacetime mission requirements the Army has assigned it, but also offset significant personnel tempo (PERSTEMPO) and operating tempo (OPTEMPO) of the Active Army. Given the personnel and equipment resources of the Army Reserve, consistent with its core competencies, significant numbers of former active component missions are today being executed by the Army Reserve's citizen-soldiers.[43] (BG James R. Helmly)

By refining its CS/CSS core competencies, the USAR has enhanced the Army's mobilization capabilities. Given the Army leadership's guidance and appropriate resources from Congress, the Army Reserve has transformed itself through a variety of initiatives into a more relevant and ready force in support of the National Military Strategy.

B. The Army Reserve in Army XXI.

How will the Army Reserve close the gap between where it wants to be in Army XXI and where it is today? Numerous initiatives have been developed by the Office, Chief Army Reserve (OCAR) and the United States Army Reserve Command (USARC) that focus on ensuring that the Army Reserve is relevant and ready to

meet the Army's requirements in the programmed force. "These initiatives address an array of Army Reserve core competencies, including deployable support units, power projection platforms, and training base and readiness enablers."[44]

Figure 3. Building for the 21st Century.

- **Theater Support Command**
- **CONUS Theater Area Support**
- **USA Installations/Base Ownership**
- **Core Competencies Expertise**
- **Outsource Low-End Maintenance**
- **Partnership With Industry**
- **Shopsmart**
- **Equipment Upgrade Initiatives**
- **Power Projection Enablers**
- **DIV(IT)/DIV(EX) Transition**
- **Automation Parity**
- **Re-engineer AMSA/ECS**
- **Reserve Associate Support Program (RASP)**
- **Reserve Officer Personnel Management Act (ROPMA)**
- **Integrated Sustainment Maintenance (ISM)**
- **ROTC Support**
- **Total Army School System (TASS) Support**
- **Storage Facilities**

Source: Office, Chief Army Reserve. U.S. Army Reserve Readiness and Tiered Resourcing. 1997.

These initiatives are aimed at enhancing USAR capabilities to perform logistics missions by improving business processes, streamlining organizational structures, optimizing peacetime training, obtaining the best values for logistics support operations, incorporating innovations in information technology, ensuring interoperability across components and Defense services, and strengthening readiness and relevancy as the CSS provider to America's Army. Some key aspects of these initiatives follow.

The USAR is transitioning the 310th Theater Army Area Command (TAACOM) to the Theater Support Command (TSC) structure. This Army concept focuses on early deployment requirements when strategic lift is most critical. The TSC concept stresses

modularity, split-base operations, and unity of command. The TAACOM Materiel Management Center (MMC) will be redesignated as the TSC MMC and it will perform both the area support function of the TAACOM MMC and the sustainment support function of the Theater Army MMC. The Theater Army Movement Control Agency (TAMCA) will be redesignated as the TSC MCA. The TSC provides a trained organization fully capable of handling the early key functions of reception, staging, onward movement, and integration and contracting (to include LOGCAP).

USAR organizational structure will be aligned under a CONUS Theater Area Support Concept. This concept assigns each of the four USAR MMCs a base support area. This initiative supports the RML plan to integrate these units into Army-wide support requirements and supports the CAR's aim to train units as they will fight.

Selected TDA positions in USAR Area Maintenance Support Activities (AMSA) and Equipment Concentration Sites (ECS) will be realigned to MTOE Direct Support (DS) maintenance organizations. Transferring these TDA positions to MTOE units will facilitate the unit's ability to train as they fight, reduce maintenance backlog, and provide mission-oriented training that will enhance soldier retention. The AMSAs/ECSs are staffed with full-time Military Technicians. It makes good sense to assign the majority of these key personnel to TOE, 'go-to-war' USAR units for better utilization of their knowledge, experience, and continuity.

The USAR is prepared to outsource 'low-end' organizational maintenance requirements to local civilian contractors and transfer DS maintenance requirements from installations to reorganized DS/GS maintenance companies. This will enable full-time military technicians and Active Guard-Reserve (AGR) soldiers to concentrate on the DS/GS maintenance backlog on a daily basis and create incentives for meaningful DS/GS maintenance tasks for drilling soldiers during weekend and annual training.

The USAR has initiated partnerships with industry, seeking the expertise of companies such as Caterpillar, Freightliner, NAPA, as well as VSE Corporation, Camber, and INNOLOG to provide research, engineering, and management expertise. In addition, the USAR is inviting industry to observe business management practices and to train with Army Reserve soldiers. This will assist the Army Reserve to find the most efficient ways to manage the new maintenance and supply structures, achieve cost avoidance, provide challenging training to soldiers, increase retention, and develop an organization that continually benefits from industry's changing techniques.

Industry has been contracted to provide technology insertions to upgrade existing vehicles and other systems. Using new and innovative technology on existing equipment increases equipment life cycle, reduces maintenance and supply requirements, and increases equipment readiness. Insertion and conversion kits will be installed primarily by Army Reserve soldiers at DS/GS

maintenance units after industry has provided training, thereby enhancing retention and the partnership with industry.

USAR wheel transportation assets are becoming the best in the Army for line-haul operations. The aim of the USAR transportation structure is to leverage industry to form a world-wide USAR power projection platform. With the evolution of transportation assets, technically competent personnel, and computerized fleet management, USAR transportation will become extremely effective and a powerful enabler for the Total Army. USAR transportation assets needed for deployment of forces and the delivery of sustainment support will be fully integrated into the Total Army mission.

The USAR has developed actions to execute new supply functions that will radically transform a supply-based, mass inventory system into a distribution-based supply system. This plan creates a retail supply support organization that will allow USAR DS/GS supply units to provide retail supply support to Army Reserve and Active Component units while maintaining a reliable productivity-based operation and will allow USAR soldiers to train on assigned tasks commensurate to their unit's war time (MTOE) mission using assigned organic equipment and systems. This concept will also provide for peacetime utilization of logistics STAMIS fielded to USAR units. These actions promote an Army transition which significantly reduces the density and redundancy of supplies, including Prescribed Load Lists (PLL),

Authorized Stockage Lists (ASL), and other repair parts and depot stockage levels.

Closely tied to these supply initiatives are the Integrated Sustainment Maintenance (ISM) bids that are being proposed by Directorates of Logistics (DOL) on USAR installations. Fort Dix and Fort McCoy are bidding on rebuild of engines, transmissions, and other high volume major repair parts for the Total Army. Army Reserve GS maintenance units are full participants with DOLs during training weekends and annual training. ISM provides a tremendous cost savings to the Army Reserve as well as meaningful mission-oriented training for soldiers.

Currently the USAR has several ongoing automation initiatives aimed at improving automation architecture. STAMIS resource requirements and shortfalls have been compiled and priorities for fielding and resourcing for each STAMIS have been clearly defined and documented. All USAR DS/GS CSS units having a supply mission are being fielded SARSS-1. The 55th, 304th, and 321st MMCs are converting to SARSS-2A, the Corps/Theater Automatic Data Processing Service Center-Phase II (CTASC-II), enabling them to provide stock control and materiel management to their areas of support, as well as stock funding, GS supply support, and storage operations for USARC installations. These initiatives are linked to constantly evolving concepts in automation architecture and will enable interoperability and compatibility with the Active Component.

Another key initiative is the proposal of three types of storage facilities for storage and maintenance of equipment. Equipment placed in these facilities will not be required to support training at USAR training centers during weekend drills. Only unit Mission Essential Equipment for Training (MEET) will be stored and maintained at the owning unit training centers. The three types of facilities have distinct functions, and selection of their locations will be prioritized based upon training support and mobilization.

Table 3. Types of Storage Facilities.

TYPE OF FACILITY	EQUIPMENT STORED	FACILITY OPERATIONS	ADDED VALUE
Training Equipment Storage Site (TESS)	Newest models of equipment, configured into unit sets. All standard equipment to support unit training.	Operated by AGRs, MILTECHS, and contractor personnel, who maintain equipment to Army Standards.	Relieves unit from transporting MEET to training site. Ensures unit trains on newest equipment in USAR structure.
Deployable Equipment Preparation Site (DEPS)	Equipment not required to support training and/or easily upgraded.	Operated by contractors who maintain equipment to Army standards. May be augmented by USAR soldiers to assist in insertion of upgrades. Inside/ outside storage.	Long term storage allows more efficient use of TESS and UESS. Equipment is easily accessible for upgrade and modernization.
Unit Equipment Storage Site (UESS)	Equipment not required to support training and will benefit from controlled humidity. Includes all OCIE,other CTA items, and newest models of equipment required to fully support mobilization.	Operated by contractors to monitor humidity control, security, etc. May be augmented by USAR soldiers when mobilization occurs or to rotate equipment to TESS or DEPS.	Equipment requires no maintenance during the time it remains in the facility. Facility is strategically located for mobilization platform. (near railway, port, airfield, etc.)

Source: U.S. Army Reserve Command. Deputy Chief of Staff, Logistics. 1997.

These initiatives represent actions in the USAR Logistics Strategic Management Plan (LSMP) that are building a bridge between the Army Reserve today and the Army Reserve of the 21st century. These initiatives are designed to enable an evolution of USAR logistics infrastructure, enhance unit readiness and training focus, and allow the USAR to transition to a full spectrum, distribution-based system that incorporates information technology to its fullest.

C. The Army Reserve in the Army After Next.

The Army roadmap for the RML challenges traditional ways of business and fosters innovative, 'out-of-the box' ideas as it seeks to determine what must be done today in order for the RML to be achievable. The Army Reserve is dedicating much effort to develop roadmaps for successfully achieving an evolutionary state in logistics that will launch USAR logistics into Army 2010 and the Army After Next. The USAR LSMP must transition the Army Reserve from its current logistics operations and structure to a projected force structure that will enable complete integration into the Army After Next. Critical to the Army Reserve evolution is the Army's modernization program, which must ensure that the Army Reserve remains capable of responding to the nation's needs into the 21st century.

The table below illustrates what the Army is doing to modernize as it transforms logistics.

Table 4. What We Are Doing To Modernize for the Army After Next.

How We Project	How We Support (Supply, Maint, Trans, GenEng & Health Svc)	How We Are Organized	How We Are Digitally Linked	Common Enablers
• Precision Deployment - Smaller, lighter, more lethal force - Faster - Fort to Fight Direct	• Anticipatory Logistics - Mobile Log Bases - Self Requisitioning Systems - Real Time Situational Understanding • Two Levels Of Maintenance • Advance Far Forward • Trauma Intervention • Enhanced Soldier Immunity against C/B Agents & Infections	• Industrial/Commercial Base • Force Logistics Command • Theater Support Command (Jointly Staffed) • Tactical Level Service Unique	•Joint, Seamless, Integrated AutoComm Capability - Semi-Autonomous Decision Support Systems - Dynamic Replanning	• Title X Changes • Doctrinal Changes • New Technology/ Systems - Virtual Manufacturing - Ultra Large Airship - Unmanned Delivery Platform - Ultra-reliable Systems - Common Platforms

Source: U.S. Army Deputy Chief of Staff, Logistics. Revolution In Military Logistics Campaign Plan-The Way Ahead. (Washington, D.C.: Government Printing Office, 1997): 15.

To summarize the illustration, the military will *project* using tailored force packages and modular units that are organized based on mission requirements and using surge capabilities for a host of deploying units in the Active and Reserve Components. Forces will be transported via larger, faster naval capability and airships that deliver forces and materials to austere areas.[45]

The military will *support* itself by using systems maintenance accomplished through contractors on the battlefield. Prognostic systems will be imbedded into our future equipment. Soldiers will order parts with credit cards via the internet from contractors, and contractors will manage the distribution of parts. Supply stockpiles will be eliminated. Financial systems will be driven by business practices versus the other way around. Smaller, modular units will support by 'log swarms'. Centralized stay-at-home organizations will manage assets.[46]

The military will *organize* in a single, joint logistics support system across the services. The Theater Support Command (TSC) and the CONUS based Force Sustainment Command will be implemented as functional organizations. There will be privatization of all aspects of the industrial base, and there will be privatization of all non-deployable support.[47]

Technology will enable *digitization* through commercial use of all aspects of force logistics. Technology will be leased, not bought, from industry. Interactive technical manuals, intelligent prognostics, asset tracking, biomedical advances, brilliant munitions, robotics killing platforms, and numerous emerging technology advances will be incorporated into RML support.[48]

IV. SUMMARY AND RECOMMENDATIONS

A. Summary.

This strategic research paper has summarized the basic concepts of the Revolution in Military Logistics (RML), the transition of the Army Reserve to meet current force structure objectives, contributions of the Army Reserve to the current force OPTEMPO, and initiatives the Army Reserve is pursuing in logistics to address the projected force in Army XXI. The paper then addresses what the Army, with the participation of the Army Reserve, is doing to modernize in terms of projecting, supporting, organizing, and digitizing.

The RML will transform the military from a supply-based system into a distribution-based system. Advances in information and logistics technologies make this transition possible. The Army Reserve, whose CSS core competencies are essential to America's Army as well as the Joint Force, are being called upon to perform increasingly more mission critical tasks in domestic assistance, contingency operations, overseas deployment training, and peace operations. Modernization efforts are seeking to enable the logistician in the Army After Next to know in advance what is needed by the war fighter, predict delivery where it is needed at the time it is required, and moving what is required by methods of delivery that utilize rapid, innovative transport techniques and platforms.

B. Recommendations.

The Army Reserve Logistics Strategic Management Plan is an essential planning tool to transform USAR logistics into the 21st century. The following recommendations are aimed at achieving the end states of the USAR RML, recognizing that it is a long term strategy that requires a process of change.

Expand the USARC's proposed Theater CONUS Area Support concept and give the 310th TSC (Provisional), 377th TAACOM, and 311th COSCOM their doctrinal missions to command and control the assigned and attached units within their areas of support, to include planning and directing Combat Service Support on an area

basis. In effect, this would reduce the command and control role of the Regional Support Commands and increase the role for each TSC/TAACOM/COSCOM. This would achieve a reduction in TDA infrastructure, enable MTOE units to perform their combat missions in support of an operational requirement, and enhance the USAR mission of providing CSS to combined/joint operations.

Expand the role of support of the three USAR MMCs to provide BASOPS support, to include retail supply support, for all TRADOC installations. USAR SARSS-O systems can efficiently handle the associated workload. This initiative would create a doctrinally correct environment, provide production based training and mission-oriented training for USAR soldiers, and achieve cost savings for the Total Army.

Eliminate the 125 AMSAs from Army Reserve force structure and transfer all AMSA resources (personnel, equipment, budget) and missions to TOE units (organizational and DS). Reduce the 32 ECSs to approximately 16 and expand their mission to include operations of TESS, DEPS, and UESS facilities.

Increase the full-time manning in Army Reserve TOE maintenance units (organizational, DS, GS, and AVIM) to accommodate all TDA transfers with a right mix of Active Reservists (AGR) and military technicians.

Establish a workforce partnership with industry that contracts industry to accomplish 'low-end' unit and

organizational maintenance tasks. This will facilitate essential mission-oriented maintenance training which reinforces sustainment of MOS skills and enhances retention of quality soldiers.

The Army Reserve leadership must provide the concepts and processes that facilitate sequential, progressive changes that initially affect a limited sector of the USAR and lead to larger and more comprehensive changes that can be implemented throughout the entire USAR organization. The design of the pilot program must concentrate on initiatives that reflect key features of the desired endstate and can be validated in a carefully controlled environment. The lessons learned must be applied to the design of subsequent organizations in each CONUS theater area of support.

These actions will produce organizations that support unit operational readiness, support the Army Reserve's goal of training in peacetime for the wartime mission, and enable the USAR to project itself as a national provider for Combat Service Support.

V. CONCLUSION

This paper started with the premise that there must be an evolution in Army Reserve logistics. The Army Reserve must accomplish this evolution as a partner with all military components as well as with industry. Essential to this evolution is the leveraging of technology to combine new concepts, information, and logistics systems, and reshaping the way it

projects and sustains America's Army into the 21st century. The road map for the USAR RML will be characterized by constantly challenging traditional ways of doing business and fostering innovation and experimentation. The endstate must be an Army Reserve logistics force that is prepared to support and sustain the Total Army combat force in the current force, programmed force, and projected force. Logistics leaders in the Total Army must determine what must be done today to make our RML achievable and maintain flexibility to adjust our azimuth where required.

ENDNOTES

[1] U.S. Army Deputy Chief of Staff, Logistics, Revolution in Military Logistics Campaign Plan-The Way Ahead, (Washington D.C: Government Printing Office, 1997), p. 2.

[2] Ibid., p. 19.

[3] Ibid.

[4] Ibid., p. 2.

[5] Ibid., p. 5.

[6] U.S. Army Deputy Chief of Staff, Logistics, Logistics Vision for the Revolution in Military Logistics, (Washington, D.C.: Government Printing Office, November 1996), p. 4.

[7] Joint Chiefs of Staff, Focused Logistics, A Joint Logistics Action Plan, (Washington, D.C.: Government Printing Office, 1997), p. 14.

[8] U.S. Army Deputy Chief of Staff, Logistics, Revolution in Military Logistics Campaign Plan-The Way Ahead, ibid., p. 7.

[9] U.S. Army Deputy Chief of Staff, Logistics, Logistics Vision for the Revolution in Military Logistics, ibid., p. 6.

[10] U.S. Army Deputy Chief of Staff, Logistics, Revolution in Military Logistics Campaign Plan-The Way Ahead, ibid.

[11] Ibid.

[12] U.S. Army Deputy Chief of Staff, Logistics, Logistics Vision for the Revolution in Military Logistics, ibid., p. 7.

[13] Ibid.

[14] Joint Chiefs of Staff, Joint Vision 2010, (Washington, D.C.: Government Printing Office, 1997), p. 24.

[15] U.S. Army Deputy Chief of Staff, Logistics, Revolution in Military Logistics Campaign Plan-The Way Ahead, ibid., p. 8.

[16] Ibid., p. 9.

[17] Ibid.

[18] Ibid.

[19] Ibid.

[20] U.S. Army, Army Vision 2010, ibid., p. 16.

[21] U.S. Army Deputy Chief of Staff, Logistics, Revolution in Military Logistics Campaign Plan-The Way Ahead, ibid.

[22] Ibid., p. 10.

[23] Ibid., p. 12.

[24] Ibid., p. 13.

[25] Ibid., p. 14.

[26] Ibid., p. 15.

[27] Department of the Army, The Annual Report on The Army After Next (AAN) Project, (Washington D.C.: Government Printing Office, July 1997), p. 3.

[28] Ibid., p. 6.

[29] U.S. Congress, Senate and House, A Statement on the Posture of the United States Army, FY98, presented by The Honorable Togo West, Jr. And GEN Dennis J. Reimer to the Committees and Subcommittees. 105th Congress, 1st session, 1997, p. iii.

[30] U.S. Army Reserve, Ready and More Relevant Than Ever, A Restructured Army Reserve (Washington D.C.: Government Printing Office, October 1996),p. 1.

[31] Department of the Army, The Annual Report on The Army After Next (AAN) Project, ibid., p. 7.

[32] Ibid.

[33] U.S. Army Deputy Chief of Staff, Logistics, Revolution in Military Logistics Campaign Plan-The Way Ahead, Ibid., p. 4.

[34] U.S. Army Reserve, Ready and More Relevant Than Ever, A Restructured Army Reserve, ibid., p. 2.

[35] Ibid.

[36] Office of the Chief, Army Reserve, Information Paper, Subject: "U.S. Army Reserve Readiness and Tiered Resourcing," November 13, 1997, provided for insertion in the CSA/SA Congressional Study book.

[37] Ibid.

[38] Ibid.

[39] U.S. Army Reserve, Ready and More Relevant Than Ever, A Restructured Army Reserve, ibid.

[40] Office of the Chief, Army Reserve, Information Paper, Subject: "U.S. Army Reserve Readiness and Tiered Resourcing," ibid.

[41] Ibid.

[42] U.S. Army Reserve, Ready and More Relevant Than Ever, A Restructured Army Reserve, ibid.

[43] U.S. Congress, House, Committee On National Security, Quadrennial Defense Review, National Defense Panel Recommendations, Statement before The Subcommittee On Personnel by BG James R. Helmly, Deputy Chief, Army Reserve, 105th Congress, 2nd Session, January 29, 1998.

[44] Ibid.

[45] U.S. Army Deputy Chief of Staff, Logistics, Logistics Vision for the Revolution in Military Logistics, ibid., p. 7.

[46] Ibid., p. 8.

[47] Ibid.

[48] Ibid., pp. 8-9.

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